BP plc 2005 Submission to the Carbon Disclosure Project

1. *General*

Do you believe climate change, the policy responses to climate change and/or adaptation to climate change represent commercial risks and/or opportunities for your company?
If yes, specify the implications, detail the strategies adopted and actions taken to date. If no, please indicate why.

Our work as a global energy company brings us into contact with some of the most challenging issues facing society today. We recognise the paradox whereby the energy which provides society with heat, light and mobility - fuelling economic growth and development - simultaneously presents us with serious environmental and social challenges. The prospect of climate change is a challenge that we must address if we are to fulfil our aspiration to be a sustainable company in a sustainable world. Thus BP sees climate change as both posing potential risks and opportunities.

In 1997 in a speech at Stanford University, California, Group Chief Executive Lord Browne, stated that BP accepted that the risks from climate change were potentially serious and that precautionary action was justified. BP later announced a target for 2010: that greenhouse gas (GHG) emissions from its own operations would be 10 per cent lower than emissions in 1990 – a tougher target than those set for many industrialized countries by the Kyoto summit in 1997. This target was only one element of a strategy to tackle the issue. Other elements included promotion of flexible mechanisms, accelerated development of new energy technologies, participation in public policy processes and investment in research both for energy efficiency (e.g. efficient fuels and engines) and to combat fossil fuel combustion impacts (e.g. capture and storage of CO2). BP also engaged in a number of experimental forestry projects (e.g. Noel Kempf, Scotland Forestry Alliance).

BP achieved its target at the end of 2001, 9 years ahead of schedule, and gained around $650 million in net present value due to many projects to increase operational efficiency, apply technological innovation and improve energy management.

After achieving its target, in March 2002 BP set a new target for the year 2012. While in some years our GHG emissions may increase, our objective is that our net emissions will show no increase by 2012. We expect our continued work on energy efficiency and flaring reductions to eliminate around half of any emissions growth we would otherwise create; and we intend to account for the other half by demonstrating how our actions are reducing emissions through the products we sell. The new target is again only one part of our overall strategy, which includes promoting market-based solutions, participating in policy dialogues, working with others on new energy technologies and investing in research.

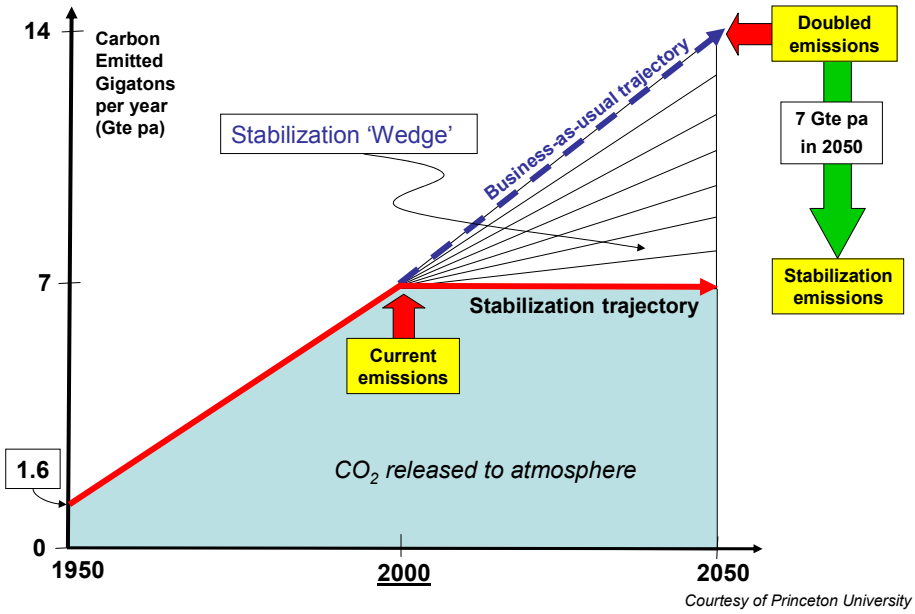
Looking beyond 2012, in November 2003, BP outlined its latest thinking on global climate change and CO_2stabilization. We also outlined a model, developed jointly with Princeton University, explaining how the world could achieve this objective through a combination of actions, each with the potential to remove a 1 billion tonne slice of carbon emissions by 2050.

> *"On the basis of practical steps, using technology which is either available now and which may be within reach, stabilization (by 2050) does seem to be an attainable goal."* Lord Browne, November 2003

Over the past 2 years, we have continued to analyse these issues and in July 2004, Lord Browne, BP's CEO, set out our latest position on the issue of climate change in an article called "Beyond Kyoto" published in Foreign Affairs (Vol. 83, Issue 4). Whilst many uncertainties remain, we believe that business planning and long-term strategy should be based on stabilising atmospheric concentrations of greenhouse gases in the range of 500 to 550 ppm, consistent with limiting global temperature rise to around 2C. This would provide a focus for

action to bring emissions to a level at which scientists believe serious damage to the environment could be avoided whilst providing society with the energy it needs. This position may change as scientific understanding evolves.

This requires the world to address the potential trade-off between growth in energy demand and the substantial environmental impact this could cause. It is estimated that the world's annual emissions from hydrocarbon consumption, currently equivalent to 24.5 billon tonnes of carbon dioxide (from International Energy Annual 2002, US Energy Information Administration), could double over the next 50 years. An important step to achieve atmospheric stabilisation would be to reduce annual emissions to today's levels by 2050.



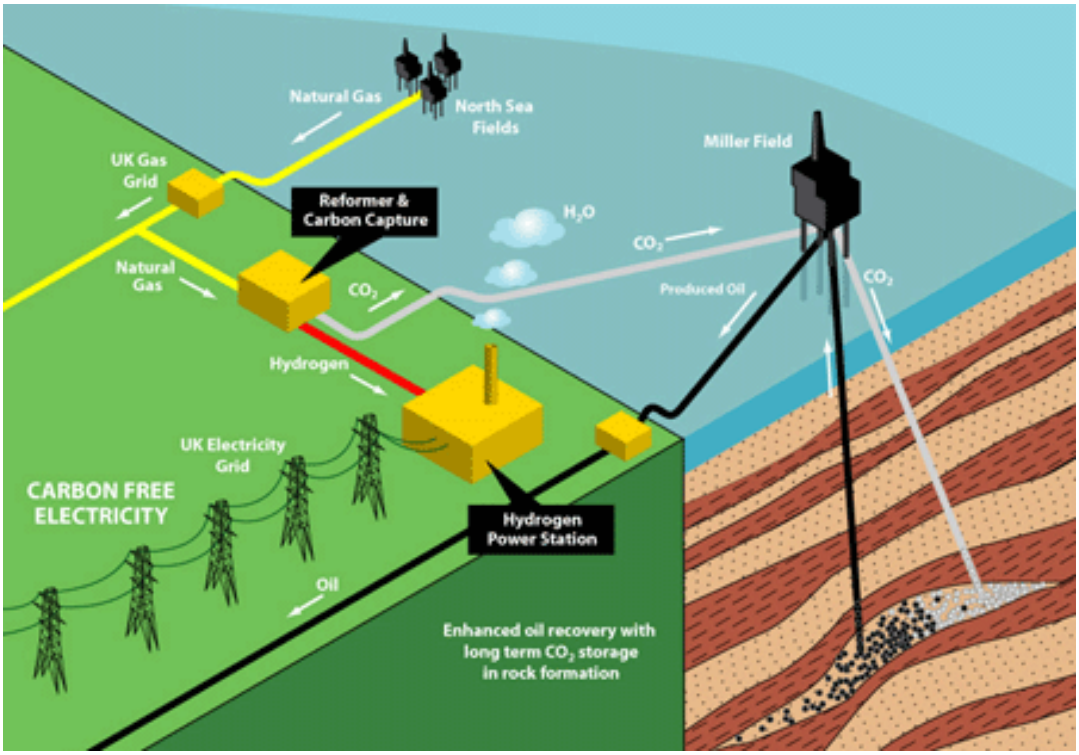
(1 Gte of carbon is equivalent to approximately 3.5 Gte of carbon dioxide.)

To achieve this Princeton University described a series of options or 'wedges', each of which has the potential to lower emissions by around one billion tonnes per annum by 2050. These actions could be started now and could combine to tackle the emissions growth. They include:

- Increasing fuel economy in cars so that two billion cars run at 60 miles a gallon rather than today's average of 30. •
- Replacing coal with natural gas as feedstock at 1,400 one-gigawatt power stations. •
- Capturing and storing the carbon generated at 1,600 gas power stations. •
- A 50-fold increase in wind power. •
- A 700-fold increase in solar panels. •
- Producing 34 million barrels a day of bio-fuels, requiring 250 million hectares of crops, or one-sixth of the world's cropland. •
- Cutting carbon emissions from buildings by a quarter by applying known approaches to energy efficiency.

Several of these options are clearly aligned with BP's business strategy. To take one specific example of this strategy in action, BP have recently announced plans for the world's first industrial scale 'Decarbonised Fuels' project. The project, in conjunction with Shell, Conoco-Phillips and Scottish & Southern Electricity, will take natural gas from the North Sea and convert it to hydrogen and carbon dioxide. The hydrogen will then be used as fuel in Scotland's Peterhead power station to provide around 350MW of clean electricity – enough to power, for example, 250,000 homes. BP will transport the separated carbon dioxide to the Miller oilfield in the North Sea where it will be safely stored in the reservoir formation at a

depth of over 3 km. In doing so, the project will also increase the amount of oil that can be produced, thereby extending the life of both oil production from the field and the benefits this brings to the UK in terms of revenue and jobs.
See : http://www.bp.com/genericarticle.do?categoryId=97&contentId=7006978



If applied to just five per cent of the new electricity generating capacity that the world is projected to require by 2050, such schemes would have the potential to reduce global CO2 emissions by around one billion tonnes a year – contributing materially to the capture and storage 'wedge' in the list of stabilisation options listed above.

Of course, all of the options proposed by Princeton would require concerted effort by governments and other industries if they are to be realised on a sufficient scale to counter the emissions growth trend. In addition, different industry sectors can work in partnership to bring new lower carbon solutions to the market.

We believe governments and international bodies can also contribute, through devising mechanisms that promote access to increasing clean energy in developing countries and achieve cost-effective emission reductions within developed economies. For example, emissions of greenhouse gases are particularly suitable for national or international trading because the goal is to reduce global emissions. If a 'common currency' in emissions can be developed, this will enable different efforts to reduce emissions around the globe to be valued on a common basis. BP has actively promoted the use of market mechanisms, including Emissions Trading and the Clean Development Mechanism, which were both formally recognized in the Kyoto Protocol. BP helped to develop the existing UK emissions trading scheme, in which it is now a participant, and is following the same course of involvement within the European Union trading scheme, which started in 2005.

Thus since 1998, BP have continued to contribute to the debate, made corporate commitments and taken substantive measures to address the issue of climate change. BP Management believe that the strategic actions it is taking on climate change are completely aligned with its business objectives and values.

See www.bp.com/climatechange , and www.bp.com/speeches

2. Responsibility

Do you allocate specific responsibility to executive and independent directors for climate change related issues?
If yes, what is the title of the person/department/board committee with this responsibility?
If no, are you planning on doing so, and if so when?

BP believes that its approach to managing climate change should be the same as that used to manage any other important aspect of its business. This approach is detailed in the BP Management Framework which clarifies how accountability is delegated to senior management within the organisation. The Group Chief Executive is accountable to the BP Board for ensuring that appropriate actions and activities are taken to manage climate change issues. Accountability for specific aspects is delegated by the Group Chief Executive to executives with authority to manage resources within BP, who in turn delegate further accountability to other authorised senior managers within the organisation.
The BP board, which is accountable to the company's shareholders, reviews BP's progress in addressing climate change at its meetings. The board separately monitors business conduct and performance management related to climate change through the work of the board's Environment and Ethics Assurance Committee, which is composed entirely of independently non-executive directors. Executive and senior management accountabilities as of April 2005 are summarised below.

Lord Browne **Group Chief Executive**
Has management control over BP's strategy for climate change. He is actively involved with climate change issues; for instance, makes speeches on climate change and BP's position and meets directly with climate change leaders e.g. Pew Center on Global Climate Change

Iain Conn **Group Executive Officer, Strategic Resources**
An executive director on the BP board, reporting to Lord Browne, who has responsibility for Health, Safety, Security and Environment, including climate change.

Greg Coleman **Group Vice President Health Safety, Security & Environment**
Reports to Iain Conn and has line management accountability for BP climate change policy and monitoring performance across the BP Group.

Additionally there are a number of people reporting to Greg Coleman who have responsibility at the corporate level for specific aspects of managing environmental and climate change issues:

John Wells	Vice President Environment
Chris Mottershead	Distinguished Advisor, Energy and the Environment
Mike McMahon	Senior Advisor, Climate Change
Kevin Ball	Director Energy Efficiency
Mark Akhurst	Manager, Product Emissions
Mark Proegler	Director, Emissions Markets Group
Gardiner Hill	Manager Group Environmental Technology

Parts of each BP business segment, including Integrated Supply and Trading, also have nominated specialists who have specific climate change responsibilities.

3. *Innovation*

What are the relevant technologies and/or processes that can be employed in your company/sector to achieve emission reductions? Have you taken any steps to develop/implement these technologies and do you anticipate being able to profit from their commercialisation?

Innovation is one of BP's four brand values and is key to BP's strategy on tackling climate change. BP believes that research and development is enabled through partnerships - with companies within and outside the petroleum sector, with academic institutions, think-tanks and NGOs; and importantly also with governments. We also believe that, although commercialisation of new technologies takes time and accrual of the full environmental benefits will taker generations, early action is necessary. For this reason BP will provide leadership often by acting as a first mover, working with others, to introduce emission reducing products and services which allow early steps to be taken on the path towards stabilisation.

The following is a selection of some of the actions we are taking:

Academic research We continue to sponsor a range of research activities at leading universities worldwide.

- **Stanford University, US:** We support a three-year, $2-million research programme on public policy aspects of modern energy markets.
- **Princeton University, US:** With Ford Motor Company we support the Carbon Mitigation Initiative, a 10-year, $20-million project that aims to find safe, effective and affordable strategies to reduce global CO2 emissions.
- **Cambridge University - Massachusetts Institute of Technology:** In addition to support of their program on Science and Policy of Climate Change, we fund a $4.5 million Cambridge – MIT project to design more energy efficient buildings.
- **Imperial College, London, UK:** We support a five-year programme investigating the use and storage of energy by buildings.
- **The Chinese Academy of Sciences and Tsinghua University:** We support 'Clean Energy: Facing the Future' . a 10-year, $10-million programme to develop and deploy new clean energy technologies for China and the rest of the world.
- **The Tsinghua BP Clean Energy Research and Education Centre**: An energy and environmental policy studies centre established through a $500,000 grant from BP.

CO2 capture and storage During 2004, we made significant progress in our work on CO2 capture and storage (CCS), which is emerging as a process with major potential to reduce GHG emissions. Using CCS, CO2 is prevented from reaching the atmosphere and instead stored in geological formations thousands of metres below the earth's surface. CCS can be carried out at power stations, oil and gas production sites or hydrogen production facilities. Before CCS can be used widely, two key issues must be resolved - costs and public acceptance. Costs have to be reduced and the public have to be assured that the technique is secure.

During 2004, the $25-million CO2 capture project that BP leads on behalf of a large public-private collaboration, including energy companies and governments, reported on its research into cost reduction and safety. Over the past five years, the project has sponsored research in a range of companies, universities and institutes, focusing on ways to reduce the cost of capture and maximize security of storage. During 2004, the project published data showing how some of these new technologies could reduce the costs of capture by up to 60% in a gas-fired power station and 48% in a refinery. The next phase of work will focus on further cost reductions and on developing standards that can be applied around the world.

In 2004, we also launched the CO2 capture and storage project at the In Salah gas field in the Algerian desert. This project is believed to be one of the largest of its type yet undertaken. In Salah is a joint venture between Sonatrach, Algeria's national energy company, BP and Statoil.

Approximately 10% of the gas in the reservoir is made up of CO2. Rather than venting the CO2, which is the accepted practice on other projects of this type, the project is compressing it and injecting it in wells 1,800 metres deep into a lower level of the gas reservoir where the reservoir is filled with water. At present production rates, we estimate that around one million tonnes of CO2 will be injected into the reservoir every year, which reduces GHGs by the equivalent of taking 200,000 cars off the road.
In 2005 we have announced plans for the world's first industrial scale 'Decarbonised Fuels' project which will supply 350MW of clean electricity (further details are provided in the response to question 1 above).

Bio-fuels We believe the next major breakthrough for fuels will be to create advanced bio-fuels from energy crops, trees or wastes. Today's conventional bio-fuels, such as ethanol or bio-diesel, are made from crops such as wheat or maize and oilseed rape. They can be blended with gasoline or diesel in small proportions, typically 5-10%, providing useful but limited reductions in GHGs. In 2004, BP became the first major oil company in Germany to blend a bio-component into diesel fuel, adding up to 5% of rapeseed methyl ester to diesel at four refineries. This is in line with EU policy to increase bio-components. The advanced bio-fuels now being researched would be made from materials that do not require intensive farming - trees such as willow and residues such as straw or organic municipal solid waste. Biomass materials absorb carbon dioxide as they are grown, reducing atmospheric GHG concentrations, before being turned into fuel. Our research suggests that such fuels could be blended with conventional fuels to offer a possible reduction of GHGs of around 25%. If used in conjunction with vehicle technologies such as diesel hybrid vehicles, such fuels might at least halve GHG emissions from the level of a typical gasoline-powered car today.
In 2004, we carried out a programme of research into biomass availability on a worldwide scale, including dedicated energy crops, agricultural and forestry waste and municipal solid waste. This work told us that biomass could make a material contribution as a primary energy resource for the road transport fuel pool and that, although extensive planting would be needed, the land requirements could be accommodated without using land needed to meet projected food production.

Hydrogen The most radical transport options currently being tested are fuel cell vehicles (FCVs) that use hydrogen. A fuel cell creates electricity to power a motor but requires its own fuel, hydrogen, to be available on board the vehicle. Hydrogen also requires infrastructure - a network of new refuelling stations. Hydrogen offers the potential to improve local air quality dramatically as its only emission is water vapour. But, while FCV cars and buses are running today as demonstration models, there are several major challenges to overcome before they can become a mass-market product. These include a reduction in the cost and functionality of FCVs, and the means of producing hydrogen without generating GHGs. Today, the lowest-cost method of manufacture is from natural gas which still emits some GHGs, although up to 40% less on a life-cycle basis than from current gasoline engines. It is possible to make very-low-GHG hydrogen using electrolysis from renewable sources, or by burning coal or gas and capturing the carbon, but these methods remain at the experimental stage.

Because hydrogen offers the possibility of transforming fuel supply, we participate in many projects worldwide to investigate its potential and to test different methods of manufacture, distribution and storage. Our aim is to test different pathways practically within a real-life environment. We are an infrastructure partner, working alongside governments and auto makers, in both the US government's programme to road test fuel cell automobiles and the nine-city Clean Urban Transport for Europe fuel cell bus programme.

In addition to the European and US programmes, our partnerships in Asia continue to grow. In China, we signed a Memorandum of Understanding to supply refuelling facilities for a demonstration of fuel-cell-powered buses in time for the 2008 Olympic Games. The project will be established by the Ministry of Science and Technology in Beijing and Shanghai.

Globally, we learned more about the importance of public acceptance of hydrogen demonstration projects with the launch of two refuelling facilities sited at conventional service stations in Singapore and Germany and the successful approval of our London hydrogen facility, following a public inquiry. Our partnerships have helped us learn an enormous amount

about the development of hydrogen as a fuel source - learning we are keen to share in order to promote greater understanding, awareness and use of hydrogen.

Solar BP is one of the world's largest solar panel manufacturing companies with global market share of nearly 20%. BP Solar has manufacturing facilities in the US, Spain, India, and Australia. The 2004 profitability of BP Solar and the solar industry was an exciting milestone in history of renewable energy.
While much has been accomplished, many challenges remain. In 2005, the solar industry appetite for silicon will begin to outpace that of the semiconductor industry. Silicon shortages are now leading to significant price increases is this vital material. Accordingly, BP Solar's technology initiatives have been focusing on the development of new silicon sources and alternative wafer fabrication techniques. These advances coupled with BP Solar's significant improvements in device efficiency provide a sound footing in the march toward grid parity in the face of rising material costs. Moreover, the current scale of the solar industry and sustained government support, will allow the economic introduction of these advances in coming years.
BP Solar is also working with key institutions, such as the Fraunhofer Institute Solare Energiesysteme in Germany and the Northwestern University in the USA to research potential solar technologies for the future. For example, in 2003 BP Solar announced it has achieved a world record in solar cell efficiency for a 125mm size cell. The 18.3% efficiency was verified by the Fraunhofer Institut and represents an 11% improvement over the 16.5% efficiency currently available with BP Solar Saturn crystalline silicon solar cells. Improved efficiency remains the underlying foundation for future BP Solar production of premium solar cells. This new technology will form the basis for the new 60+MW BP Solar Tres Cantos facility in Madrid, Spain, as well as underpinning efficiency improvements at the existing Alcobendas facility near Madrid.
See www.bpsolar.com

4. Emissions Trading

Do you have a strategy regarding emerging greenhouse gas emissions regulation and trading initiatives such as the EU Emissions Trading Scheme and the Chicago Climate Exchange?
If yes, specify the implications, detail the strategies adopted and actions taken to date.
If no, are you planning on doing so, and if so when?

BP has actively promoted the use of market mechanisms, including Emissions Trading and the Clean Development Mechanism, which were both formally recognized in the Kyoto Protocol. BP helped to develop the existing UK Emissions Trading Scheme (ETS), in which it is now a participant, and is following the same course of involvement within the European Union (EU) scheme, which was launched in January 2005. We believe the EU ETS, effectively the world's largest 'cap and trade' programme for GHG emissions, provides the launch pad for development of a global carbon market. The focus should be to support the use of credits resulting from mechanisms that encourage development of energy efficient infrastructure, in both the developing and developed world, and thereby reduce emissions.

BP have created an Emissions Markets Group to manage all our emissions trading activities, and established a trading desk within our Integrated Supply and Trading business – bringing together environmental, technical and business professionals with experience in the oil, gas and power markets. Processes have been devised to ensure our sites comply with the EU ETS and the system provides added incentives for them to reduce emissions. 27 BP sites are included in the system, which collectively emitted about 28% of BP's global equity share direct GHGs during 2004.
BP's also participates within the voluntary UK Emissions Trading Scheme (UK ETS):

- BP Exploration and Production (E&P) business participates within the Direct Participant section of the UK ETS. BP E&P promised to reduce emissions by 353,500 teCO_{2e} over the lifetime of the scheme (2002-6), nearly 10% of the commitment made by UK industry, and has successfully achieved the agreed reductions in the period 2002-2004. BP E&P elected to remain in the UK scheme until the end of 2006 and will then transfer to the EU Emissions Trading Scheme.

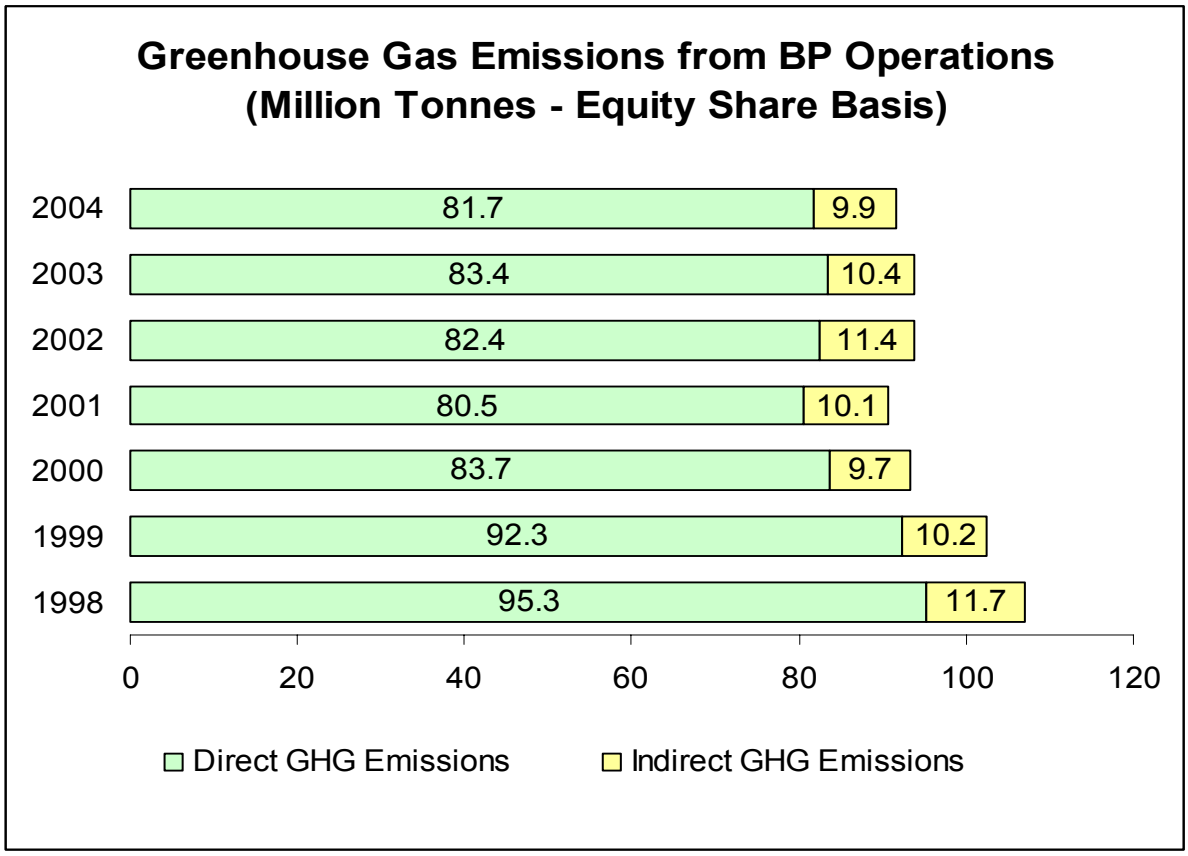
- BP Chemicals installations also participate in the Climate Change Agreement section of the UK ETS. BP Chemicals exceeded its targets in 2002 and 2004, and have agreed more stringent targets for the period beyond 2006, when the facilities have opted to participate in both the UK ETS and EU ETS.

Although we input into its development, BP are not currently participating in the Chicago Climate Exchange however we are involved in a number of other US voluntary climate change initiatives which promote the quantification and registration of GHG emissions. Examples include the US Department of Energy 1605b program and its reform to include entity-wide and project reporting of actual GHG emissions and emission reductions. We are also involved in shaping and participating in state and regional initiatives such as the California Climate Action Registry and the regional Greenhouse Gas Registry (RGGR) focused on the Northeast States, which provides the infrastructure for a GHG emission cap and trade program, the Regional Greenhouse Gas Initiative (RGGI). We also support the American Petroleum Institute (API) Climate Challenge and the American Chemical Council Climate Action programs, which are industry association public-private partnership initiatives with the US Department of Energy and other federal agencies, which aim to contribute to the US Presidential goal of reducing GHG intensity by 18 percent from 2002 levels by 2012 (Climate VISION). BP also supports the EPA Climate Leaders public-private partnership that encourages development of long-term climate change strategies and GHG reduction goals.

5. Operations

What is the quantity in tonnes CO2e of annual emissions of the six main GHGs produced by your owned and controlled facilities in the following areas?

- **Globally.**
- **Annex B countries of the Kyoto Protocol.**
- **EU Emissions Trading Directive.**



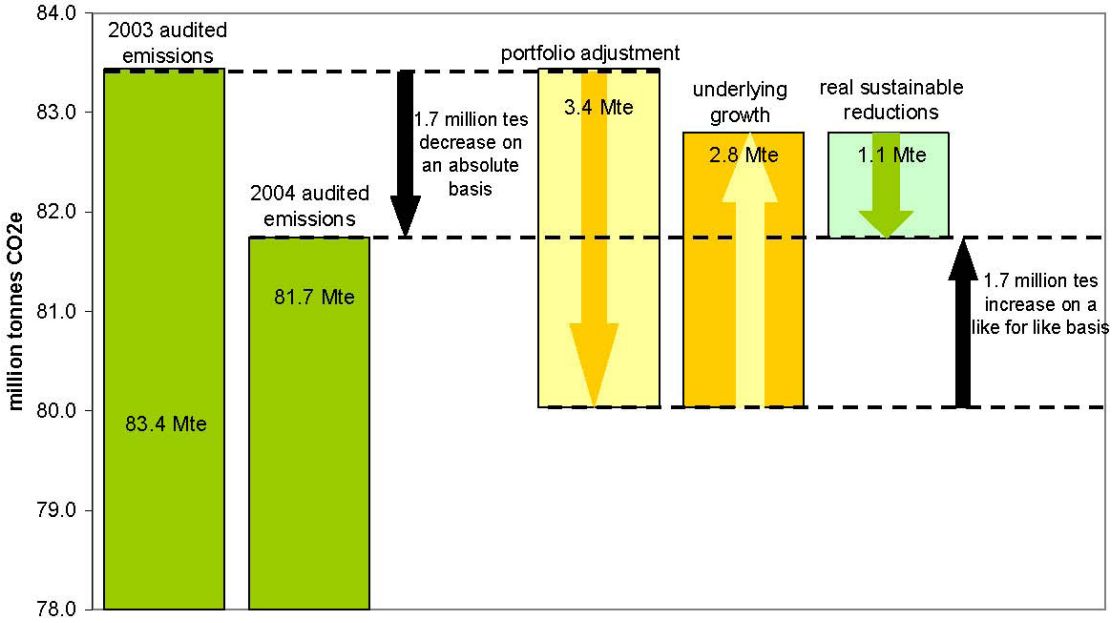
Equity Share GHG Emissions from BP Operations Globally	Units	1998	1999	2000	2001	2002	2003	2004
Direct Carbon Dioxide	Mte	84.8	82.8	76.6	73.4	76.7	78.5	76.8
Direct Methane	Mte	0.50	0.45	0.34	0.34	0.27	0.24	0.23
Direct GHG	Mte	95.3	92.3	83.7	80.5	82.4	83.4	81.7
Indirect Carbon Dioxide	Mte	11.7	10.2	9.7	10.1	11.4	10.4	9.9

See www.bp.com/hsechartingtool

BP's operational emissions are publicly reported on an equity share direct basis. The equity basis includes BP's share of emissions from all facilities wholly or partly owned by BP subsidiaries or by a joint venture entity in which BP has an interest. For 2004 our annual CO_2 emissions were 76.8 million tonnes and our annual CH_4 emissions were 0.23 million tonnes. We reported our global operational direct GHG emissions as 81.7 MteCO_{2e} (million tonnes of GHG emissions as CO_2 equivalent). The rest of the six main GHGs produced in our operations have been estimated and add up to less than 1% of our total emissions, and therefore we currently consider these to be not material in terms of emission management. In addition to reporting our direct operational emissions we also track our indirect CO_2 emissions, which were 9.9 million tonnes in 2004, on an equity share basis. Indirect CO_2 emissions result from fossil

fuel combustion in power plants from which BP purchases energy supplied as either electricity or heat.

Our direct equity-share emissions in 2004 were lower than 2003 due to acquisitions, divestments, methodology improvements and also achievement of an internal target to achieve 1Mte of sustainable reductions (see response 7 below).



Full disclosure is made of BP's equity share direct and indirect emissions for the years 1998 to 2004 on our bp.com website. This includes disclosure of changes in direct emissions due to actions such as acquisitions or divestments or methodology changes, which do not impact global emissions. Year-to-year performance differences are explained in terms of decreases due to projects which result in sustainable reductions, which permanent eliminate emissions, and we report increases in emissions due to organic growth in our business.

After baseline audits of 1990 and 1998 emissions, BP's 2000, 2001, 2002 and 2003 inventories were subject to comprehensive audit by KPMG and DNV who verified that there was no material mis-statement of annual operational direct GHG emissions as assessed against the reporting requirements stated in BP's Group Environmental Reporting Guidelines. This process for the 2004 inventory is now complete, and once again the audit opinion is consistent with previous years.

BP specialists have been actively involved in the creation of international guidance on accounting and reporting of GHG emissions. We are active participants on WRI / WBSCD GHG Protocol working groups and played a leading role in the development of the recently published IPIECA / OGP/ API Petroleum Industry Guidelines for Reporting Greenhouse Gas Emissions (December 2003). BP's Reporting Guidelines are in good agreement with the WRI / WBSCD Protocol and IPIECA Guidelines.

As recommended by the IPIECA Guidelines, BP also estimates total emissions from all facilities under BP's operation control, irrespective of ownership. We use the terminology "100% operated" to distinguish emissions reported on this basis from the equity share basis reported above. BP's direct GHG emissions on a 100% operated basis were 98.1 Mte in 2004, compared to 81.7 Mte on an equity share basis. The 100% operated basis emissions reflects the scale of emissions over which BP has management responsibility / operational control, while the equity share basis reflects the potential exposure of the company's investors to GHG emission markets.

For 2004, BP's direct equity emissions for Annex B of the Kyoto Protocol were 59.5 million tonnes CO_2 and 0.18 million tonnes CH_4.

Kyoto Annex B	2002	2003	2004
CO2 Mte	63.5	64.0	59.5
CH4 Mte	0.21	0.18	0.18
GHG MteCO_{2e}	68.0	67.8	63.2

For consistency with BP's reporting basis, the EU Emissions Trading Directive data is presented on an equity share direct basis, for the BP facilities within EU member state participating in the scheme. For 2004, $C0_2$ is 22.8 million tonnes and CH_4 is 0.01 million tonnes.

EU Trading Scheme	2002	2003	2004
CO2 Mte	24.5	25.8	22.8
CH4 Mte	0.01	0.01	0.01
GHG MteCO_{2e}	24.8	26.1	23.0

6. Products and services: Do you estimate the emissions associated with:

- **Use and disposal of your products and services[1]?**
- **Your supply chain.**
- **Other indirect emissions (e.g. business travel)**
  - **If yes, for each of the above, please provide further information.**
  - **If no, are you planning on doing so and if so when?**

We have been working to quantify the GHG emissions created by the use of our products and to test processes for measuring the contribution of cleaner products to lowering emissions. We estimate that CO2 emissions in 2004 from use of hydrocarbon products sold by BP totalled 1,376 million tonnes. This has remained virtually constant since 2003, when product-related emissions were estimated to have been 1,354 million tonnes. We previously reported these 2003 emissions as 1,298 million tonnes, but during 2004 we have refined our analysis to include some additional items, resulting in this restatement. Achieving a proper representation of product-related emissions is a complex area and we continue to work on improving our methods. For 2003 and 2004, product-related emissions and energy sales (reported below) are estimated from BP's total reported product sales volumes as published in BP Financial and Operating Information 2000-2004 by applying IPCC energy and CO2 conversion factors.

	Emissions from end-use of BP Products (Million tonnes CO2)
Fuels and lubricants	586
Gas	732
Chemicals (assumes combustion)	58
TOTAL	**1,376**

The emissions from products sold are considerably greater than the emissions equivalent to the oil and gas that BP extracts from the earth (which were approximately equivalent to 560 million tonnes CO_2) because BP purchases substantial quantities of oil and gas to refine, process and sell.

We believe the stabilization of GHG concentrations in the earth's atmosphere can only be achieved by using lower carbon-intensity energy products and by using them more efficiently. We contribute towards both products and services: producing more gas than ever before – our gas production has more than doubled since 1998 and now accounts for about 40% of our total production; BP's capacity to produce clean fuels exceeds legislative requirements in all markets where BP has a refinery; and our solar business is growing at about 30% per annum with sales increasing from 32 megawatts (MW) of generated capacity to 71 MW over the past 4 years.

In terms of materials used in the manufacture of our products, BP is effectively at the beginning of the supply chain in terms of fossil fuel production. Thus the vast majority of the emissions related to BP activities are downstream of the supply chain to BP. In the case of our refined products and chemicals products, the carbon in the feedstock represents the majority of the material climate impact. BP is also a consumer of fossil fuels it produces, with most of our primary energy for operations generated from hydrocarbons we extract.

We report supply chain climate change impacts in relation to indirect GHG emissions, which are reported on an equity share basis. Our reporting scope is restricted to indirect emissions resulting from fossil fuel combustion in power plants from which BP purchase energy supplied as either electricity or heat. As noted previously, our total indirect emissions for 2004 were 9.9 million tonnes of CO_2.

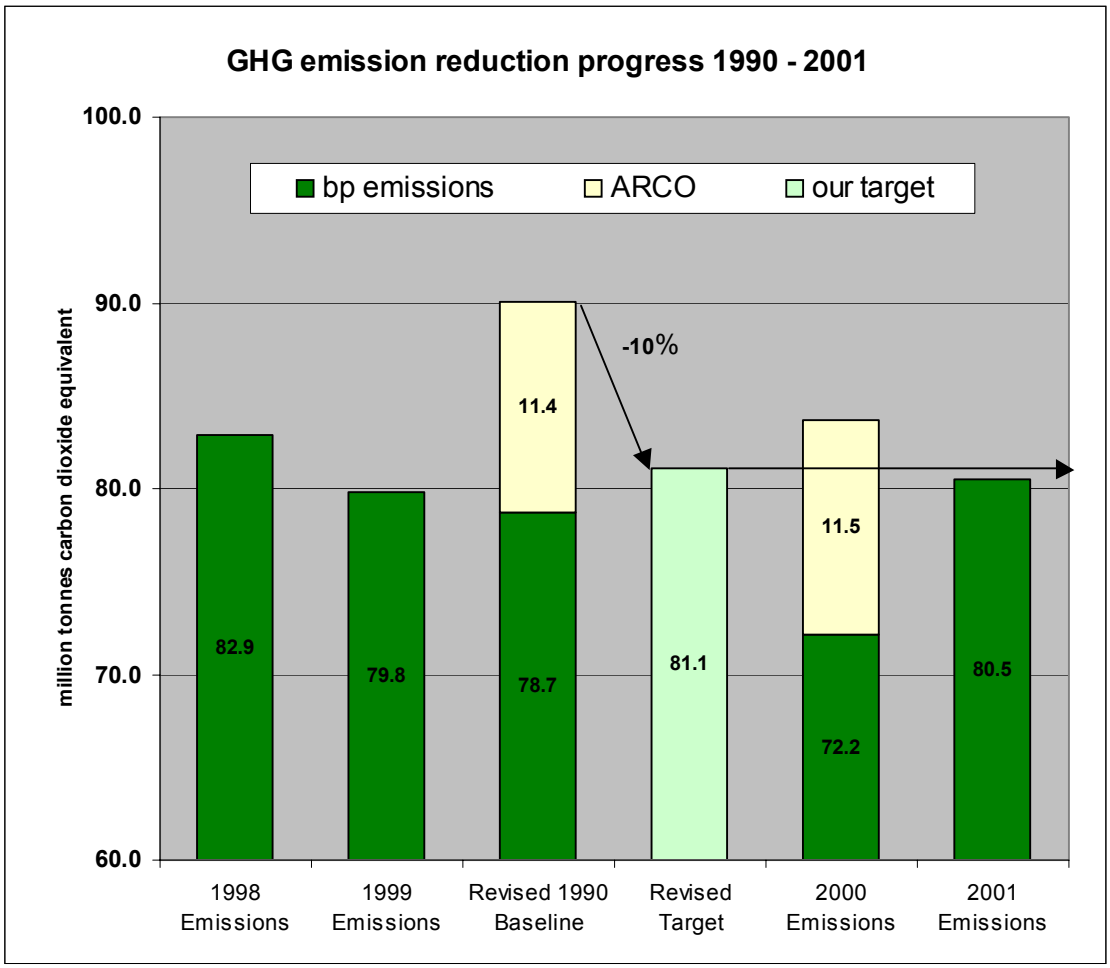
In addition to indirect emissions from operations, our largest offices around the globe participate in our Green Office initiative, which focuses on waste minimisation and energy efficiency. The initiative typically involves evaluation of indirect GHG from building electricity demand and road or air transport.

BP has over 135,000 different suppliers of materials, products and services across more than 100 countries providing a huge range of engineering, technical, construction, retail, financial, computing and legal services, among many others. Many of BP's suppliers already report their emissions publicly. While in some areas, we are beginning to evaluate supply chain emissions and identify ways to effect reductions, a complete inventory of BP's supply chain emissions is not viewed as either practical or material, relative to BP's operational or product related emissions.

7. Emissions reduction: Do you have emission reduction programmes in place?

- **If yes, when were they established and what are the targets? What have been the reductions achieved, the investment involved and the associated costs or savings? Please also detail any targets relating to Questions 6 and anticipated costs or savings.**
- **If no, are you planning on doing so, and if so when?**

BP has had GHG targets in place since 1998 which have brought about reductions in emissions. In 1997 in a speech at Stanford University, California, Group Chief Executive Lord Browne, stated that BP accepted that the risks from GHGs were serious and that precautionary action was justified. BP then announced a target for 2010: that greenhouse gas emissions from its own operations would be 10 per cent lower than emissions in 1990 – a tougher target than those set for many industrialized countries by the Kyoto summit in 1997.



BP achieved that target at the end of 2001, 9 years ahead of schedule, and gained around $650 million in net present value due to many projects to increase operational efficiency, apply technological innovation and improve energy management. For example, BP has achieved one of the energy industry's lowest unit rates of gas flaring – the burning of surplus gas produced at the same time as oil, either for safety reasons or no apparent market.

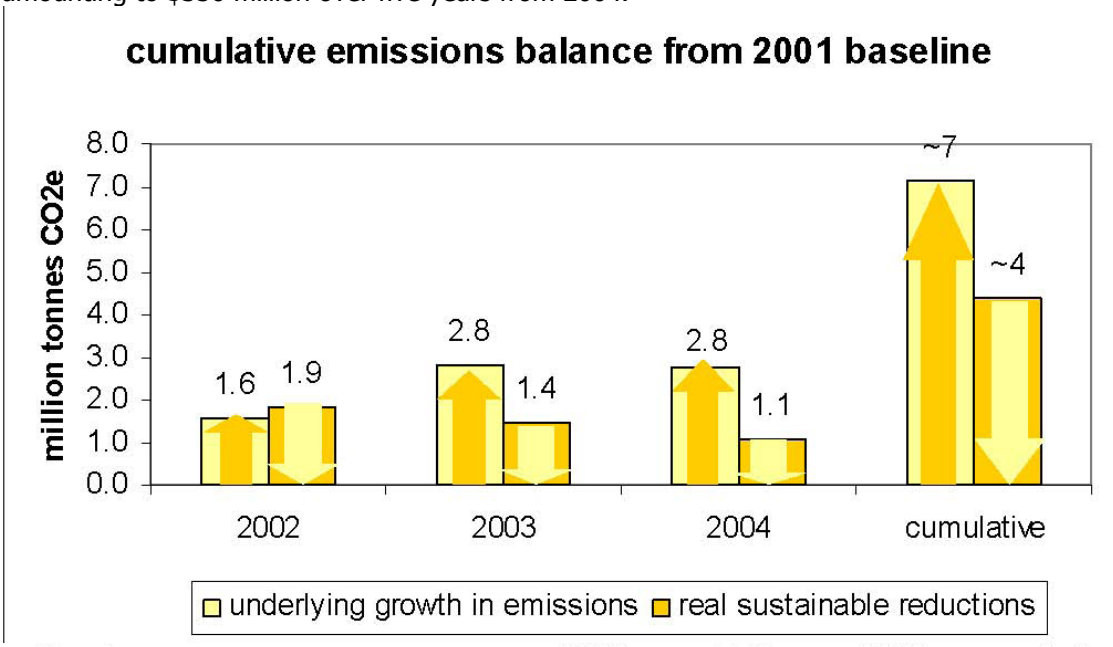
Because of the inherent uncertainty in our 1990 baseline, it was felt that fixing a clear baseline was more transparent and adjustments to the baseline could only be made for acquisitions or divestment which were material. The only material change was the acquisition of ARCO in 2000. Having set a new baseline with much lower uncertainty, from 2001 onwards we developed our reporting with an improved process to track performance by accounting annually for all acquisition and divestment changes irrespective of size.

After achieving our first target, in March 2002 BP set a new objective for the year 2012. Our aim is to offset growth in our emissions with reductions achieved partly from operational efficiency projects and partly from the supply of products that are cleaner or offer improved fuel efficiency. Thus in assessing our future performance, we aim to manage two principal kinds of emissions:

- Emissions generated from our operations such as refineries, chemicals plants and production facilities, **operational emissions**.
- Emissions generated by our customers when they use the fuels that we sell, **product emissions**.

The two forms of emissions need to be taken together to provide a meaningful picture of the nature of emissions through the life cycle of energy. For example, production of LNG is energy-intensive and results in high operational emissions, but the overall life-cycle emissions are lower than some other fossil fuels, because of the lower carbon content of LNG.

While in some years our operational emissions may increase, we expect our continued work on energy efficiency and flaring reductions to eliminate around half of any emissions growth we would otherwise create; and we intend to account for the other half by demonstrating how our actions are reducing emissions through the products we sell. We plan to achieve the planned reductions in operational emissions through capital investments in energy efficiency projects, amounting to $350 million over five years from 2004.



million tonnes	2002	2003	2004	cumulative
underlying growth in emissions	1.55	2.81	2.76	7.12
real sustainable reductions	1.86	1.45	1.05	4.36

In line with our 2012 objective, more than half our emissions growth since 2001 of about 7 million tonnes has been offset by about 4 million tonnes of sustainable reductions (on a like-for-like basis after accounting for all divestments, acquisitions and methodology changes). This included over 1Mte of sustainable reductions in 2004 from projects to reduce flaring and venting or improve energy efficiency at our operating sites. Significant GHG reductions in 2004 included:

- 400,000 tonnes from reduced flaring and venting of gas and improved combustion efficiency in Canada, Abu Dhabi and Trinidad and Tobago.

- 250,000 tonnes from energy efficiency measures at the Whiting refinery and Texas City plant, US.
- 100,000 tonnes from energy efficiency measures taken across the Petrochemicals segment.

These reductions partly offset emissions increases during 2004 resulting from organic growth of our business; the largest of which were:

- 700,000 tonnes from new power generation facilities at Texas City, US, and in Vietnam.
- 500,000 tonnes from new LNG and methanol processing facilities in Trinidad and Tobago.
- 400,000 tonnes from additional production of oil and gas in Angola and Algeria.

Our aim for 2005 is to achieve a further 1Mte of sustainable reductions.

For the second part of our 2012 objective, our challenge is to meet the increasing demand for energy by providing products with lower impacts on the earth's climate. We believe that there are two parts to this; providing energy products with a lower carbon density per unit of energy supplied and using energy more efficiently. BP believes that contributing in both of these areas will help us build a successful business in the lower-carbon world of the future. To help us do this, we have been seeking to improve our understanding of how our products can contribute to lowering customers' emissions. This happens in two main ways:

Providing the energy customers need through fuels that contain progressively less carbon. Since 2001, we have grown our energy sales by 47% in clean natural gas and 5% in oil-based products, which are mainly transport fuels. As a result, natural gas now accounts for 61% of the energy we supply, up from 52% in 2001. At the same time, our sales of solar panels have grown by 78%.

Providing products that help customers use energy more efficiently. The methodology we have developed for this forms part of our Product-Enabled Emissions Reductions programme (PEERs). As part of the programme, we have studied how some of our formulated products, such as transport fuels and lubricants, enable customers to use energy more efficiently. On a case-by-case basis, we have estimated the emissions avoided by the products. More importantly, we have explored what it would take to increase market share of each product, or to create other energy-saving products. For example, in India we recently began marketing multigrade vehicle lubricants in a market dominated by monogrades, enabling vehicle engines to operate more efficiently. We are currently working to evaluate the impact this is having on CO2 emissions. Initial estimates suggest the product is acting to reduce customer emissions by around 0.8 million tonnes a year (for 2004 and 2003). Work is ongoing with external auditors to verify this figure. In 2005, our goal is to increase the number of such case studies, exploring how we can market emissions-saving products on a wider basis.

8. ***Emissions intensity***

Do you measure emissions intensity against production, sales or other output measures?

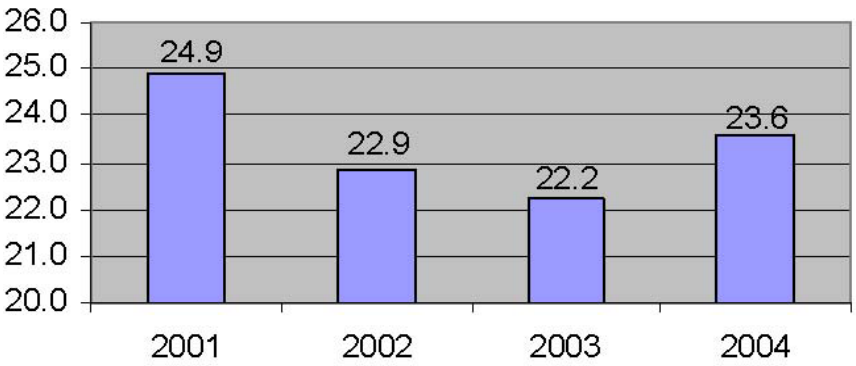
- **If yes, what is your historical and current intensity data? What are your emissions intensity targets?**
- **If no, are you planning on doing so and if so when?**

Since 2001, we have steadily increased oil & gas production, as well as increasing volumes of fuel processed in our refineries and volumes of manufacturing in our chemicals business. We can compare this business growth with our emissions growth to calculate our direct greenhouse gas emissions per unit of production, measured in tonnes of CO2e per barrel of production, refinery efficiency factors (uEDC), or manufactured volumes as appropriate (te/kte).

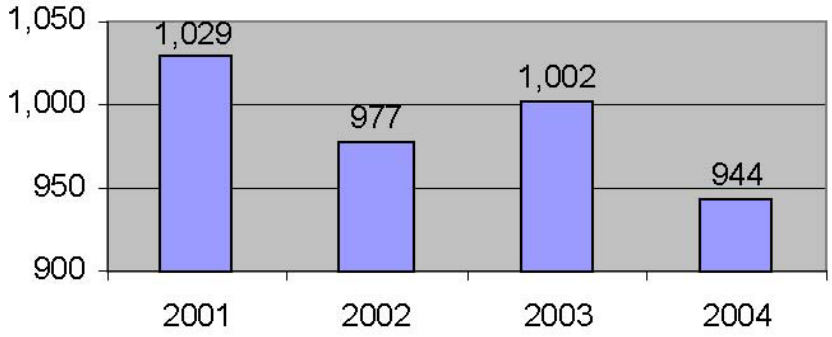
In 2004, compared with 2001, these showed:

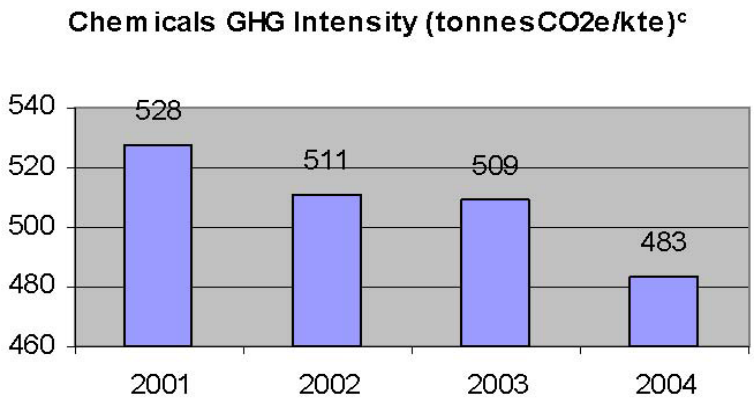
- 5% improvement in Exploration and Production to 23.6 teCO2e/mboe.
- 8% improvement in Refining to 944 teCO2e/kbduEDC.
- 8% improvement in Petrochemicals to 483 teCO2e/kte.

E&P GHG Intensity (tonnesCO2e/m boe[a])[c]



Refining GHG Intensity (tonnesCO2e/kbdUEDC[b])[c]





Notes

a Direct GHG emissions per unit of production are measured in tonnes of CO_2 equivalent (CO_2e) per thousand barrels of oil equivalent (mboe) for E&P, per thousand barrels per day (kbd) for Refining and per thousand tonnes (kte) for Chemicals

b uEDC – Utilized Equivalent Distillation Capacity is used globally in the refining industry as a normalized measure of production

c The Refining 2001 baseline reported in the *BP Sustainability Report 2003* has been corrected and restated from 1,064 to 1,029 teCO_2/uEDC.

d The emissions from our Gelsenkirchen site have now been re-apportioned between our petrochemicals and refining businesses, thus adjusting the GHG per unit performance of both in 2003.

Although Exploration and Production performance shows an overall improvement since 2001, our emissions per unit of production in 2004 were higher than in either 2003 or 2002. This was because, in some mature assets, oil and gas production declined at a faster rate than emissions, an effect which will be offset by new energy efficient production planned in our new profit centres by 2006. For Refining and Petrochemicals, the improvement reflects the continuing impact of energy efficiency measures in our manufacturing operations. Our Gas, Power and Renewables business is not included in this analysis because its emissions are relatively small.

In March 2002, when we announced our current public objectives on how we would manage GHG emissions until 2012, we stated that our continued work on energy efficiency and flaring reductions should eliminate around half of any emissions growth we would otherwise create. We also stated that this would involve a 10-15% improvement in our energy efficiency. Each of our main business targets has therefore taken on a share of this improvement, typically by undertaking to achieve a 15% efficiency improvement over the period in their operations.

To encourage this planned level of improvement, we launched a five-year, $350-million programme in 2004 to develop energy efficient technologies and processes that will reduce GHG emissions, with a goal of avoiding one million tonnes each year. All our businesses are invited to put forward ideas, and we fund those which have the best commercial and environmental prospects. In 2004, $50 million was allocated to such projects, with the remaining $300 million to be spent over the next four years. The $50 million spent in 2004 funded more than 100 new projects above and beyond the business-as-usual activities already under way at our sites. Many of these projects continue into 2005, and will be joined by 80 new projects, all contributing to future emission reductions. Outstanding efficiency performance has been achieved at several sites: for example, Grangemouth in Scotland has seen a 13% improvement in its energy intensity index over the last three years, along with a saving of $3 million in the last 18 months. One innovative intervention allowed the refinery to reduce CO2 emissions by switching from fuel oil to gas in large fired heaters, through the application of a ceramic coating technology.

9. Energy costs: What percentage of your total revenue is represented by the costs of fossil fuels and electric power?

BP, in common with other petroleum companies, uses part of the oil and gas it extracts to generate power and heat for its operations, and as such does not pay directly for fossil fuels or electric power, generated directly by the facility. Some of BP facilities do purchase steam of electricity from power stations owned by others. Annually we calculate how much primary energy we use in our operations (i.e. based on the energy content of fuel used, whether directly generated or purchased). For 2004, we estimate our primary energy use was 1.34 billion GJ, compared to 1.37 billion GJ in 2003 and 1.43 billion GJ in 2002. The cost of fossil fuel varies considerably but at typical fuel prices, we estimate that this energy has an equivalent cost of about $5 billion. Thus it can be concluded that less than 2% of BP's revenue would be represented by an equivalent cost of the primary energy used by our operations for power and heat.

For further information on this submission please contact bill.boyle@bp.uk.com